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ABSTRACT

This paper presents an analysis of two cases developed by students in a course co-taught at the University of St. Thomas (Minneapolis, Minnesota) concerning how technology decisions get made and implemented. The aim is to demonstrate how leadership students can become adept at ferreting out and diminishing the biggest problems encountered in technology dilemmas. The paper begins by describing the course, "Leadership and Technology," and theoretical premises upon which it relies. It then outlines the details of the two cases which are presented in much the same way that they were constructed. First, a logical, modernist account is constructed; analysis of this account is based on Cartesian standards. Then the case is reconstructed to account for many of the postmodern individual contexts that affect the outcome of the case. Finally, the case is analyzed in a way that puts together some nonmodern measures that a leader might take to alleviate the situation. Implications for leadership theory are then discussed. (Contains 16 references.) (AEF)

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IT'S NOT ABOUT TECHNOLOGY: WHAT TWO CASES REVEAL ABOUT INFORMATION TECHNOLOGY DILEMMAS

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Calls for educational reforms have been frequent during the last two decades. One of the more interesting arenas of reform activity is the systemic infusion of information technology into educational content and practices. The purported benefits of introducing such technology in schools include the promise of richer curricula, more innovative pedagogical methods, and increased opportunities for students' interaction with others in far-removed places (Dede, 1998). In other types of organizations, comparable gains in information access, retrieval, and overall productivity are largely responsible for surging investor interest.

As with all promising innovations, the purchase, placement, and accessing of new computers causes its own dilemmas. Those who must decide on the technology often enjoy no special expertise in this arena. Even if they are very familiar with what's currently available, choosing the "right" hardware and software can only be seen as a short-term optimization due to rapid obsolescence. In addition, many of those expected to cheerfully and creatively use the new equipment, often do so with less enthusiasm than was originally anticipated. This is particularly true of technology infusions in schools (Hodas, 1993).

Our Theoretical Framework: Technology Dilemmas as Context-Dependent

We are interested in how information technology adoptions progress and are perceived. Often they go askew, and for a significant period of time. Both media and research literature alike generally attribute the slip-ups to bureaucratic intransigence or institutional tunnel vision. We don't entirely agree with this interpretation. In collecting case studies to explore the subject more fully, we have found that most

infusions and wholesale replacements of technology, whether successful or not, are very complicated matters. This paper contains an analysis of two cases developed by students in a course we co-teach concerning how technology decisions get made and implemented. Our intent is to demonstrate how leadership students can become adept at ferreting out and diminishing the biggest problems encountered in technology dilemmas.

The Course

We begin by broadly describing the course and theoretical premises upon which it relies. Entitled "Leadership and Technology", the course's readings and activities are designed to assist leadership students to analyze technology-related dilemmas they are experiencing in their own organizations. A cornerstone activity is the development of a case study according to the guiding theoretical framework described below. The cases include a historical description of the organization, the author's role within it, and a discussion of the technology dilemma. The resultant data are generally organized into three types of information: 1. The official "plan," its origins and account of why the technology innovation is desirable; 2. An "in the trenches" account of what aspects of the infusion are not going well that focuses on various actors' perceptions of it; 3. Following a restatement of the dilemma when considered from combining both the official and "trenches" accounts, a description of the situation's pressure points.

The cases conclude with a suggested strategy for using the unearthed pressure points to minimize the (usual) conflicts and logjams that have emerged. If the case is a historical one, this section usually amounts to a reassessment of the author's experiences and interpretations of the events described, including alternative strategies

than those actually employed. If "live," the author often finishes with clear tactics and strategies for those occupying leadership roles – both formal and informal – in the case.

Theoretical Premises, A: Leadership Case Research

In methodological terms, our modus operandi amounts to a form of comparative case analysis. Although case methods have long been a staple in various professional education traditions (especially law, business, and clinical medicine), this has not been common within schools of education. Nevertheless, it is only one step removed from an increasingly familiar tradition within them; that of the distinctive brand of ethnography developed and identified with the Chicago School of Sociology. Intellectually inspired by George Herbert Mead, a long-time friend and collaborator of John Dewey, a significant body of researchers associated with Chicago (e.g., Goffman, 1961; Hochschild, 1983; Fine, 1987) have established a loosely coordinated collection of institutional ethnographies that explore Mead's fascination with how humans constantly interpret their interactions with others.

The Chicago-inspired studies, which usually consist of a rich case description and analysis of one such setting, fruitfully explore the issue of how individual actors generate a sufficiently common account of themselves and each other to operate together effectively. In Meadian terms, the result is a "generalized other," a mental map of social roles and expectations, that enables any particular actor to know what s/he is supposed to think and do (Mead, 1934).

Our method is a similar one, but we augment it along the lines pioneered by Erving Goffman. Goffman, who is commonly identified with the Chicago School, illuminated

Mead's core assumptions by highlighting their representational aspects. He actually posited that our actions begin to play out in a "dramaturgy" that fits the scenes we have constructed from our interpretations of earlier events. Put differently, he maintained that we humans "script" all interactions into scenes with plot lines and characters.

From Goffman's perspective, organizations like K-12 schools and districts depend upon a collective "plot" – a series of connected representational vignettes – that enables each individual who interacts with them to know his, or her, part (1959; 1961). If we accept the Mead-Goffman premise that individuals construct their actions and interpretations based on the soundings they have made of previous everyday life, then the forms they give to those soundings – the symbolic representations they construct as a kind of lexicon of "do"s and "don't"s – are critically important vehicles for understanding organizational life.

If so, the concept of representation – how symbolic information is depicted, and how it gets interpreted differently depending on context and interpreter – is critical to understanding what is happening when organizations experience turbulence. Organizational "troubles" can certainly be sparked by external factors (e.g., unexpected budget shortfalls or personnel shortages). Even so, every significant trouble implies important internal modifications, or perhaps even breakdowns, in former established patterns of the system's operating "script." Such changes invite ambiguity at minimum; quite often they result in structural conflicts.

It is commonplace, for example, for software to be represented as extremely useful in a school setting due to the powerful applications that it makes feasible. This is

particularly true of venders' promotional language and literature. It is also common, however, for the vaunted applications to have been only partially tested in comparable settings, and then only under optimal conditions. In effect, the "heroic" representation of technology's potential may, or may not, fit any particular site. Notwithstanding, even misplaced heroic representations – whether about technology, restructuring, or any purported "solution" to organizational problems – are powerful. They can easily feed the interpretative yearnings of onlookers. They can also lead those charged with leadership down the primrose path, or a number of other less desirable avenues, unless they become savvy to the symbolic aspects of technological infusion and policy development.

Theoretical Premises, B: Modernist, Postmodernist, and Nonmodernist Analysis

If understanding the importance of the ongoing representations of technology's capability and potential is central to a leader's clear thinking in general, it is particularly crucial when things begin to go askew. The analysis of technology cases requires a variety of theoretical lenses to aid in "unpacking" these representations. To underpin our students' analyses, we present three different models of representation. First, we look at modernist assumptions about the structure of knowledge itself, particularly in how these assumptions play out in most discourse about technology. Analysis of the influence of such thinkers as Descartes is useful here. Next, we subject modernist assumptions to postmodernist critique through the works of Foucault, Baudrillard, and Derrida. Finally, we offer a hybrid that has its roots in the philosophy of John Dewey, but is for our purposes, currently posed best by Bruno LaTour. We think this hybrid approach is extremely useful for school leaders struggling with how

to make sense of the often tangled implications of information technology in their school sites.

Modernism

Modernist assumptions about knowledge and its depiction, as voiced in the philosophy of René Descartes, are ubiquitous in technology "talk." Descartes searched for a universally accepted method for ascertaining certainty. His famous dictum "Cogito, ergo sum" – the fact that I think is what counts, and let's leave the body out of it – is the ultimate statement of the dualism of mind and body. Descartes strove for an objective methodology that did not suffer from the individual interpretations of subjective humans. That his thinking has influenced western epistemological values is evident in Western reliance on "Scientific" method as the criterion of reliable knowledge. In this view, all knowledge not relying on the specific method is considered to be "anecdotal;" for him the functional equivalent of potentially delusional epiphenomena (1637). Further, Cartesian Science lionizes three major premises in constructing an analysis. These are: Researcher objectivity is not only possible, but a necessary condition of legitimate analysis; 2. Only conclusions that can be quantified reliably are trustworthy; 3. Every true finding should be generalizable to every other instance of the event described.

These are core epistemological premises with powerful implications. Among other implied tenets, this view of reality – particularly when applied to organizations like schools – posits that specific classroom, building, or district dynamics are virtually irrelevant. This is true both in terms of the presumed irrelevance of the analyst becoming familiar with the idiosyncrasies of the site's history and actors (in the

interest of objectivity) and as concerns the relevance of context in general. Further, the analyst should limit the scope of consideration to those data that can be quantified (e.g., budget expenditures, individual actors' years of experience and level of education). Any other types of information may provisionally be entered as "anecdotal," but fits only in a discretionary technical appendix.

We contend that modernism – more specifically, the kinds of representations it generates – contains important blind spots. For example, where providing new computers should logically promote better efficiency, the modernist perspective suggests that they should be installed if the budget allows. Such "extraneous" considerations as whether specific actors will put them to best use, or are even interested in doing so, are part of a vast "black box" of anecdotal imponderables that must be kept to the side.

Leaders must think about such scenarios. The modernist approach to leadership is, by dint of its absence of concern for the vagaries of specific places, often inadequate as a means of making sense of any given building's incomplete "digestion" of information technology. Moreover, the modernist response of attempting to mandate general expectations will only go so far. Despite high-flying public statements made about the limitless benefits of new technology infusions on learning, the relationship between the two will change only if sufficient resources, subtle persuasion, and a bit of finesse are added to the mix. These everyday, highly contextual aspects of school leadership lead us to our next representational lens; that of postmodernism.

Postmodernism

Our method recognizes that postmodernism, which commonly takes the form of critiques of modernism's errors, is especially powerful when looking at an organizational "rupture" in which technology is involved. Specifically, we look at assertions about power and discourse when using this theoretical lens to unearth why the (usual) modernist assumptions undergirding specific event tension have been found wanting. Put simply, postmodern critiques allow for the deconstruction of a "one size fits all"/authoritative discourse about technology. Thus, issues of power, context, and authority are often revealed in the "postmodern" details of technology case dilemmas.

We define postmodernism as the turning of Cartesian modernism on its ear [to paraphrase Marx and Hegel]. Our own course lexicon defines postmodernism as a systematic disputation of the premise that any perspective or account of reality – even that of science – holds a legitimate claim to privileged status (Kramer & LaMagdeleine, 1998b). We take pains to note that even the claim of democratic consensus fails to satisfy the postmodern criterion of truth; that every perspective, not matter how marginalized or fleeting, is equal to any other.

Even so, postmodernism has its own blind spots when viewed from the perspective of someone entrusted with keeping any social group or organized activity together. For example, within the (admittedly) bureaucratic structure of the institution, if no one person has more authority than another, how are decisions to be made? Will all accept shared authority willingly, and is this even reasonable to expect when so much of everyday life is clearly organized in hierarchical and/or hegemonic ways? We live in a world built upon modernist assumptions of order. Nevertheless, the remaining issue

for those interested in leadership is how to maintain some semblance of authority when something more than an official position and a formal plan are necessary. We think the necessary theoretical base is offered in the still largely unexamined margins *between* modernism and postmodernism.

Nonmodern Hybrids

Since we discuss Dewey and Latour more completely in another place (c.f. LaMagdeleine and Kramer, 1998), we will only touch on them here to support the nonmodern lens that forms the third analytic framework our students use. Anchored in John Dewey's conceptualizations of democracy and experience and Bruno Latour's Nonmodernism, we propose a leadership perspective that allows for a blending of modernism and postmodernism. In essence, nonmodernism denies Cartesianism's subject-object duality (the existence of which Dewey was highly skeptical), and instead seeks to understand the order of things through the singular contexts that each individual brings to the problem. Such an approach means that the leader pays attention to a wider array of experiences than a singularly modern or postmodern approach would

We are heavily indebted to Dewey's work. However, we also find the theory being generated by the contemporary French sociologist Bruno Latour extremely helpful; mostly because his lexicon has, of necessity, taken account of the development of postmodernism. In Latour's terms, postmodernism is a reaction against improperly digested modernist ways incurred in the attempt to model the social and policy "sciences" on Cartesianism. At the same time, it is an accurate assessment of the bipolar approach that physical scientists have taken in assessing their own work. Put

simply, the common dictum that "Science is value-free" is a dodge because it is only true if none of the implications that follow from research ever get implemented (1993).

Latour rejects modernism as overly simplistic when applied to humans' activities and interactions. However, he is equally hard – perhaps harder – on postmodernism because he considers it a flawed critique of a botched philosophic system.

An important concept contained in nonmodernism is what Latour terms "symmetrical" analysis. He uses this term to capture the need to balance scientific knowledge against all the contextual factors (e.g., politics, economics, and culture) that complicate most of the truly pressing issues Twenty-first Century humans need to resolve. These dilemmas are neither entirely removed from human agency (e.g., the origin of the cosmos) nor limited entirely to human-made systems like schools or banks. Rather, the really "big" issues to be faced are combinations of both realms. Just two examples of such hybrid "events" or "quasi-objects" (as Latour terms them) are global warming and acid rain. Analysis of these types of dilemmas clearly involves ecological research to be conducted in the types of experimental designs spawned by Cartesianism. However, they also require sophisticated data collection and analysis of the collective actions of millions of humans organized in thousands of organizations, and the effects of these actions on the environment. This is a realm that such organizations, partially because of the dominance of modernism in recent human history, were heretofore not epistemologically prepared to realize or accept.

This returns us to the matter of the kinds of dilemmas educators are routinely encountering during information technology infusions and restructurings. In Latour's terms, they are clearly "events" that require an analysis spanning the epistemological

boundaries of both modernism and postmodernism. In particular, technology infusions incorporate some of the ostensibly irrefutable "logic" of computers, but they also run head on against the multiple interpretations of those expected to implement the new kinds of processes the software is programmed to facilitate. When focusing exclusively on one end of this continuum (usually the quantitative modernist one), it is not possible to see the social mediation, and related interpersonal meaning making, that dominates the other end. This is where leaders typically get into trouble when dealing with computer dilemmas. The problem is not that they can't read a budget spreadsheet. Rather, educational leaders aren't encouraged or trained to anticipate the multiple ways in which any basic technological change will touch upon all a school's operating assumptions about itself and what it's supposed to do. Given the significant connections to our understanding of knowledge and learning that are associated with computers, this can be particularly troubling for a leader.

Two Cases: Detailed and Analyzed

Below, we outline the details of two cases. We present the cases much the same way that they were constructed. First, a logical, modernist account was constructed. Analysis of this account is based on Cartesian standards. Then, the case is reconstructed to account for many (certainly not all) of the postmodern individual contexts that affect the outcome of the case. Finally, the case is analyzed in a way that cobbles together some nonmodern measures that a leader might take to alleviate the situation.

Case One: "Who's on First?"

The first case took place within the context of a large mid-western city. Although a bit later than in other cities, the urban trend toward escalating school violence contributed to district administrators' decision during the mid-90s to buy into a pre-packaged attendance reporting software that would automate all 70 city schools. From the district perspective, the new technology would satisfy increasingly stringent demands being put on the system -- principally by the state for attendance data -- on which the state's share of funding per student would be based. Its price tag, in the millions of dollars, was judged a necessary expense to achieve this end, and it was thought that much of the money spent to automate the system could be made up over time by letting go of personnel. In the case of Gotham High, this was the "two little old ladies" who served as attendance clerks.

The software was chosen and installed virtually without input from teachers or principals based upon its reputation for efficiency, reliability and security. As is often the case with such innovations, the software became operational only just before the beginning of the school year. It was only sketchily tested before it had to be used in full-scale operation.

Modernist Assumptions: Who's on First

We assume that Cartesian Science, the cornerstone of the "modernist" perspective, is an extremely important achievement, both conceptually and historically. It is clearly preferable to any other conceptual system yet developed in sorting through inorganic, and even many lower order organic processes. Science's perspective on Truth and its verification has also played a profound role in technological development. In addition, its emphasis on rational fact-finding within the canopy of Enlightenment ideals and

new social philosophies fueled the birth of widespread political respect for individual rights and education. Finally, many social theorists have agreed with, and further elaborated upon, Max Weber's observation that rational bureaucratic systems were largely responsible for the West's ability to develop extremely efficient large scale organizations such as armies, a public school system, or capitalism itself (1921). We concur with the premise that modernist modes of thought are extremely valuable in systematizing organizational reality.

In this case, the adoption of the new district wide software reflects the kind of systematized response to a district "problem" that characterizes the premises of modernism. The data required by the state is objective and takes precedence over other data needs. The data is quantifiable, and it generalizes across the school district, no matter the individual school site. Logically, the needs for funding by an urban school district are always a concern. The promise of software that will keep both individual school site and aggregated district attendance data, looking like an exact fit with the needs of the state, seems reasonable enough. The decision to adopt and the follow-up to that adoption reflected high modern bureaucracy at its most logical. So what's the dilemma? What makes this an interesting case?

Postmodern Details: Who's on First

The author of this case played the role of assistant principal in the city's largest high school, which we will name "Gotham." The school itself enjoyed a long and distinguished tradition for academic excellence, but also housed a broad range of other types of programs serving across the spectrum of student abilities and interests. From the first day of the year, the new attendance program was a fiasco. Its protocols called

for each teacher to enter a code for each student in every class period. The choice of codes was quite limited. The three teacher options were "Present", Excused Absence" (which demanded a specific follow-up code connoting that the reason for the absence was to see a counselor, the nurse, or attend an outside medical/other approved appointment), and "Unexcused Absence."

Because teachers had no way of knowing enough about the student's absence to decide which of the mandatory "Excused Absence" codes fit the situation, they did one of two things: Either they entered "Unexcused Absence," or they just did not enter the data. In the bustle of the opening of class, teachers judged it an onerous task to enter the data. Certainly it was much more difficult for the classroom teachers than the previous practice of simply writing down absent students' names and sticking them in a preassigned spot just inside the classroom door to be collected.

The teachers' unanticipated data entry "shortcut," coupled with a greater incidence of non-reporting, resulted in a large number of what we might term "false positive" unexcused absence "blips" in attendance reports. Many of these occurred in the first period and weren't even discovered until much later in the day. When they were discovered it was often because a student needed to be located by a parent. Unfortunately, the system had no way of tracking students who were considered absent because its emphasis on information security disallowed most personnel from entering anything but a highly restricted set of codes tailored to a specific job. Moreover, teachers and others could not compensate for the day's oversights or mistakes by entering corrected data after school was over. The system was set up to only accept data between 7:00 AM and 3:00 PM—the hours that teachers were

required to be in the building. However, these were also the hours that teachers were teaching or preparing for classes.

This combination of technical oversights and everyday practices resulted in the author's primary daily dilemma that year, which was the inordinate amounts of time she spent tracking down students deemed AWOL by the system. She typically found herself following the students' individual passage through school that day, starting with the first period classroom. These searches were often lent an extra degree of urgency by the fact that the system had been designed to automatically call the parent/guardian of any "AWOL" student that evening. Sometimes, due to various circumstances and the number of such calls to be made, this call came near midnight. Commonly, their surprise and worry over the purported absence was changed to varying degrees of anger when they discovered that it was all merely a mistake.

Postmodern Analysis: Who's on First

Now we can illustrate why we think postmodern analysis is particularly important in case analysis of technological dilemmas. When leaders apply the brand of healthy suspicion it trades in to the common "techno-talk" that often figures heavily in top-level policy makers and technology specialists, they can often find key data of a highly non-rational kind. Derrida's assertion that no one can legitimately claim authority over any given discourse – that any interpretation is equal to another (1978) – is helpful in understanding why techno-events don't always follow the modernist script. It becomes possible, even likely, that the authority granted to the technology specialist advocating a new computer-based pedagogy will evaporate in the face of the authority of the teacher who resists (whether actively or passively) the adoption of new

technology into his or her classroom. Put another way, the high school classroom teacher might well claim a personal authority over what it means to "teach" in a way that precludes using technology despite what the official building or district technology says.

Non-modern Analysis: The Assistant Principal Cobbles a Solution

Now we turn to the solution that the Assistant Principal cobbled together as she finally faced her dilemma with attendance for what it was. Her original (modern), thinking when she began to construct her case, was that the problem was one of getting the teachers to buy into the new system. However, when she began to ask postmodern questions such as, "What does faculty work look like?" she saw that the system was incompatible with the way that faculty defined their work. In general, she saw that for faculty, attendance is only important when it impinges directly on teaching. The system was too far removed from this "fact" to allow its whole-hearted adoption by teachers.

Now that she understood the nature of the case more clearly, she realized that she had to come up with a solution that reflected the needs of the district within the reality of a high school. Even though it became easier for her to understand how the system might have been developed (wrongheadedly) without input from classroom teachers or building administrators from a modernist perspective, the assistant principal had a dilemma. The new software was a closed-ended system.

From a postmodern perspective, the sheer magnitude of actors' perspectives left unconsidered in the system's development boggles the mind. The viewpoint of teachers, who are usually trying to accomplish two or three things at once at the start

of a class, was totally ignored. So was that of counselors, the nurse, and even the principal's office except in the most rudimentary way. At another level, the postmodern framework also highlights the potential built within the new system for reinforcing the already negative perceptions of school among disaffected students. Certainly it was disconcerting for those among Gotham's honor students to be erroneously declared absent on a temporary basis. But for those Gotham students who were barely making it for any one of a number of reasons – including distrust for "the system" in general – such an experience only corroborated their alienation. How can one respect a (school) system that routinely mislabels students with such frequency?

At Gotham High, the assistant principal decided that what was required to satisfy both the district and her school was a two-pronged approach. As concerns the district procedures, she lobbied for – and received – heightened access to data entry fields that had formerly been restricted from her. She, and a few other key actors such as the school nurse and guidance counselors, could now connote that a student was with them and did so regularly. The assistant principal also requested that the automatic calling system be "unhooked," at least until the system's bugs had been worked out. This was also approved.

However, the most elegant solution was one that looked to the past for its inspiration. The reinstatement of "the two little old ladies" as attendance clerks solved two problems at once. It would bring two more adults back into the building who get to know the students' fairly well. It would also lessen the "red tape" teachers had to contend with in the middle of teaching a class. They merely had to signify who was

absent, as before. The ladies entered the necessary absence information once they were sure of its accuracy.

This last point affords us to comment on the "two little old ladies" who had been replaced by the system. The fact that these ladies had formerly walked the halls to collect attendance slips meant that nearly everyone in the school, students and teachers alike, knew them. Moreover, their task of checking up on students declared absent – and the "seat of the pants" strategies they learned for quickly finding temporarily "unaccounted for" students – left them well informed about individuals and their attendance. This was no mean feat in a building with over 2000 students. Nor is it an unimportant one.

Case Two: A Tale of Two Systems

Like the rest of the country during the early nineties, the issue of crime became highly politicized in the state of Northwest. After some discussion the legislature mandated that a statewide criminal justice information system be constructed and implemented. Until this time each municipality had been using its own system of information, which for most meant filing cabinets full of fitfully maintained data collected as local officers found time to compile and catalog it. There was no systematized way of sharing information, or even a standard taxonomy of filing categories. Moreover, the usual rivalries (e.g., between urban and rural, state troopers and municipal departments) operated within the state.

The problem was not only that local jurisdictions were often fiercely territorial. In addition, the typical officer in Northwest – the much vaunted FBI information system notwithstanding – was generally more resistant to the advantages of adapting new

information technology than has been true of many other fields. This situation meant that those responsible for developing the new system would be facing a certain amount of computer phobia in addition to the straightforward technical problems involved. The project's aim was to assemble a centralized criminal information system even as the statewide police workforce became acculturated to using information technology. Toward the end of statewide integration of data, all departments that had formerly maintained their own systems were to download those systems into the state system once it was operational.

The project was assigned to a middle administrator (female detective) in the state Office of Law Enforcement. She was a savvy veteran officer who ran a small, and chronically understaffed, group. She was forced to rely on interns more than she felt was legitimate due to tight budgets, and realized that little by way of additional resources were to be added for the project. In addition, the systems analyst assigned to the job was only marginally able to speak English. She took no interest in building a field component into her duties, despite the urging of the detective to visit some local departments to observe how they worked. The detective hoped that such visits would provide some insight into the limited time typically allowed for data entry among street officers, and the often only tenuous connections made between the usefulness of information and the measures taken for its quality assurance.

Instead the systems analyst developed the logic for data categories and entry procedures in virtual isolation, deep within the recesses of the state Systems Information Department. As soon as the detective got a chance to examine the developing system she was alarmed. It was not only expensive – eventually millions

would be spent – but was extremely clumsy to use. It relied upon a complicated set of conceptual distinctions based on some of the national crime databases, but without the beat cop's working distinctions.

The new system's data entry was fairly complicated. When the detective had some of her staff try out the demonstration model, they complained bitterly about how cumbersome it was. Likewise, when she invited a few municipal departments to try it, the word got around quickly that it was a lemon. She took her concerns to the Information Systems department, but was told to mind her own business; it was not her job to meddle with systems analysis.

Modern Analysis

The detective's modernist analysis emphasized the state's overriding concern for establishing one standardized criminal information system for the state. While not an inherently flawed goal, the state's approach to achieving the desired goal was quintessentially bureaucratic. The project developed according to highly bureaucratic protocols in which one department is strongly discouraged from entering the purview of another. As Max Weber pointed out long ago, bureaucratic procedures amount to the rationalization of organizational life. Jobs, and the departments in which groups of workers are housed, are assumed to routinize specialized expertise. Hence the fact that the analyst assigned to the project barely spoke English was judged extraneous information within the Information Systems department because its concern is

computer expertise. Likewise, the fact that she knew nothing about police work was judged irrelevant.

Notwithstanding, the detective concluded that the analyst's refusal to observe how cops actually work was a critical misstep in the way the system was designed. Her refusal could well have been influenced by the fact that she would have understood very little of what was being said, yet she could have compensated for her language difficulties in a number of ways (e.g., ask someone else from her department go along, bring a translator, or just watch how data gets entered) had she thought it useful to visit some field sites.

Later, when troubling signs from those who were supposed to use the system became common, the detective was told to mind her own business by the system analyst's boss. She had no choice but to obey. That's how Northwest state agencies and departments worked. The modernist solution to a larger problem had resulted in a highly stressful setting for the detective, and from a modernist point of view, she had very few if any options except to adopt the new software with all its warts and blemishes.

Postmodern Version: Focus on the Players

The detective's postmodern analysis focused on the perspective of the various data generators; one in particular was crucial to the project. As stated many of the municipal and other police forces were getting restive about the new system. Perhaps the most adamant opponent was the one who had personally compiled the largest and most complete independent database.

Some years earlier the largest city in the state had developed its own information system. Largely on the back of one interested detective who liked computers, the system was designed on a PC for simple (word and phrase) searches. Its designer had built it around some basic premises of the national databases, but had adapted the categories for ease of recognition and data entry. It had proved quite helpful in a number of investigations, and was admired by those in local law enforcement.

The city system's designer was not an overly humble person, but he was justly proud of his accomplishment. In effect, he played the unofficial role of "Information Czar" for the city police department. He openly scoffed at the clumsiness, and exorbitant expense, of the state system being developed. Once he heard about its problems, he also threatened to boycott the system by not downloading the city data. This was no small threat, since that data was both the most complete and had proven most useful across the state's formerly independent databases.

The project director/detective's dilemma was a knotty one. The recalcitrant Information Czar commanded a lot of power of both a professional and a political nature. He would probably not be forced against his will to participate in the download. Moreover, he could sway some other police departments to stonewall, which would effectively gut the statewide database as well as potentially threaten her job. Not only was the system being designed in isolation of the reality of police work but the best data in the state was about to be withheld.

By the time she wrote this case, she was soon expected to vouch for a system that she didn't think had been designed well. Moreover, the best single database in the state was about to be withheld from the central system.

Postmodern Analysis

Such postmodern thinking is extremely useful for the leader trying to figure out why the technology plan is not being realized. If one accepts that there is no authoritative "text" regardless of what the organizational chart suggests, then a leader who wishes to fully appreciate how a technology change will fare must do a lot more spadework. S/he must start by rejecting the modernist urge to attempt to reduce all social reality to rational planning and implementation, or to a "one size fits all" solution. That leaves her obliged to cobble something together that takes multiple narrations into account without denying the power of any one narration.

Nonmodern Thinking: The Detective Finds the Clues

The detective's nonmodern analysis proceeded along very different – mostly representational and political – lines than the modernist ones with which she had begun thinking about the project. First, she decided that she had to acknowledge the fact that many of the presumed users of the new system were highly antagonistic to it. To attempt to deny this fact was not only disrespectful of the many comments she had heard, but it ignored her own instincts as a cop. Moreover, she thought that the system's structural flaws were deep enough that it might never operate as envisioned. The modernist logic with which it had been designed could well take so large an overhaul that a newer, better, system would evolve someplace else – perhaps in another state or even at the federal level – that would make it obsolete.

She decided to address the legislature's goal of a statewide system, as well as the bureaucratic culture of state government, by crafting the approaching "download" date as the inauguration of a pilot program that would enable ongoing evaluation even as the system began. This amounted to an altered "representation" of what the download meant. What had originally been officially described as a "drop dead" date (after which local police departments need no longer keep their own databases) became optional participation in a pilot project to test how the central system worked as compared to local ones.

This change in what the download "meant" lessened the detective's dilemma in three ways. First, it allowed the analyst, and her increasingly defensive department, to save face. The system had been successfully designed and implemented; it just needed adjustment. Second, it made the city detective happy to participate (while keeping his system operational). Actually, it promised him a great deal if the problems in the state's system proved as serious as they seemed to be. His system might prove a major factor in the "test" that proved the state system inadequate. It might even become a template for the next generation statewide "solution". Finally, the pilot actually made good sense from a practical (if not Cartesian) perspective. Despite many onlookers' misgivings, the new system might work well with a few tweaks. Those tweaks might be facilitated by observing the ways in which the city's database did some things better than the state's.

Implications for Leadership Theory

Our analysis of these two cases is that leaders who don't take seriously the importance of context – be it the perspectives of the actors directly involved or the situated nature of even what appears to be a purely "technical" issue – are likely to make deeply flawed decisions. In the Gotham case, top administrators decided upon specific software because of its promise to standardize and secure attendance data, and then allowed those charged with implementing it to do so without taking into account what teachers do. In the law enforcement case, modernist logic in the choice of the assigned programmer and the subsequent bureaucratic rebuffs of early warning signs of trouble down the road.

Our opening observation is not surprising in itself, but because of the technological focus of each case it leads to a less obvious implication. It seems much less important for a leader to be knowledgeable about the (technical) hardware and software and much more important to be able to admit what s/he doesn't know. Once faced squarely, the acknowledgement of gaps in one's understanding allows for fact-finding; a potentially powerful tool on multiple levels. First, it fulfills (modernist) bureaucratic expectations about what a leader "does." After all, it is expected that decisions will be made after an adequate exploration and vetting of the facts. Building this process into the front of any potential technological infusion will seldom be questioned on modernist grounds.

Second, there is symbolic power in the formal and informal consultations that occur when the leader is gathering information. In addition to the actual knowledge gained, those expected to use the new technology will probably appreciate the concern being paid to including their feedback.

A third implication is one that should inspire leaders to continue to seek data, even when the fact-finding seems complete. Technology adoption is not a "value neutral" activity. The fact that individual members of the organization will react differently to technology infusions means that each person affected by the adoption will grow in a slightly different way. The modernist assumptions that generally guide technology adoptions can truly get "turned on their ear" by different individuals' ways of adoption. The leader who is constantly assessing technology's growth, resistance, pressure points, and areas of acceptance, is much more likely to positively influence the possible outcomes of the new technology. This truly does require a "non-modern" point of view.

Our finding, that technology dilemmas are not really about technology so much as they are about modernist blind spots and hubris, should come as a relief to those leaders who do not consider themselves E-wizards. Rather, it is at least as important for the leader to understand the (institutional) system's power bases, stressors, and shortcomings than it is to be familiar with the latest technological innovations. These are, when all is said and done, what will ultimately dictate how the technology "works."

Finally, we consider the theoretical approach we take in teaching students to construct their case studies another powerful analytic tool for leadership courses. It combines a clear brief for leadership students' being plugged into their professional practice while facilitating their ability to assess it in a highly sophisticated way. If this observation holds for technological dilemmas, it is even more likely to apply to the other types of dilemmas leaders face.

REFERENCES

Argyris, C. and Schon, D. (1974). *Theory in practice: increasing professional effectiveness*. San Francisco: Jossey-Bass.

Dede, C. (Ed.) (1998). *ASCD Yearbook 1998: learning with technology*. Alexandria, VA: Association for Supervision and Curriculum Development.

Derrida, J. (1978). *Writing and difference*. Trans. A. Bass. London: Routledge & Kegan Paul.

Descartes, R. [1637](1979). *Meditations on first philosophy*. Indianapolis: Hacken.

Dewey, J. (1934). *Art as Experience*. New York: Perigee Books; The Berkley Publishing Group.

Fine, G. A. (1987). *With the boys: little league baseball and preadolescent culture*. Chicago: University of Chicago.

Goffman, E. (1959). *The presentation of self in everyday life: ?????????*. Garden City, NY: Anchor

_____ (1961). *Asylums: essays on the social situation of mental patients and other inmates*. Garden City, NY: Anchor.

Hochschild, A. (1983). *The managed heart: commercialization of human feeling*. Berkeley, CA: University of California.

Hodas, S. (1993). Technology refusal and the organizational culture of schools. *Education Policy Analysis Archives* 1(10).

LaMagdeleine, D.R. and Kramer, B.H. (1998). Transgression and forgiveness in an international school: a nonmodern case study. *Educational Administration Quarterly* 34:3(August):427-455.

Latour, B. (1993). *We have never been modern*. New York: Harvester/Wheatsheaf.

Mead, G. H. (1934). *Mind, self, and society*. Ed. C. Morris. Chicago: University of Chicago.

Osterman, K. and Kottkamp, R. (1993). *Reflective practice for educators: improving schooling through professional development*. Newbury Park, CA: Corwin.

Toulmin, S. (1991) *Cosmopolis: the hidden agenda of modernity*. NY: Free Press.

Weber, M. [1921](1974). *Economy and society*, Vols. 1-3. Berkeley: University of California.